

## CLAIMS—I claim:

1. A shell of generally spherical form comprising a plurality of segments, characterized in that:
  - a. said segments are substantially identical;
  - b. said segments have an oblong form; and
  - c. said segments each have a generally parallelogram shape.
2. The shell of claim 1 wherein said generally spherical form is a portion of a sphere and said generally parallelogram shape is substantially a spherical quadrilateral comprising:
  - a. a first long side, having a first length;
  - b. a second long side, having a second length near to said first length, and disposed in near parallel alignment to said first long side;
  - c. a first short side, having a first short length;
  - d. a second short side, having a second short length;
  - e. a first interior angle between said first long side and said first short side;
  - f. a second interior angle between said first short side and said second long side;
  - g. a third interior angle between said second long side and said second short side; and
  - h. a fourth interior angle between said second short side and said first long side.
3. The shell of claim 2 wherein said generally parallelogram shape is derived by division of a face of a spherical triacontahedron into uniform rows and columns.
4. The shell of claim 3 wherein said first long side divides said face of said spherical triacontahedron in half and said plurality of segments is sixty per whole sphere, thus determining the segment width, in degrees, at the center of said first long side and determining partially the lengths and angles in degrees as follows:
  - a. said width at the center of said first long side is substantially 18 degrees;
  - b. the sum of said first short length and said second short length is substantially equal to said second length of said second long side;

- c. said second length is approximately 37 degrees;
  - d. the sum of said first interior angle and said fourth interior angle is substantially 180 degrees;
  - e. said second interior angle is substantially 72 degrees; and
  - f. said third interior angle is substantially 120 degrees.
5. The shell of claim 4 wherein said shape has substantially the same width at its two ends, so that the lengths and angles are further determined as follows:
- a. said first short length is approximately 18 degrees;
  - b. said second short length is approximately 19 degrees;
  - c. said first length is approximately 39.5 degrees;
  - d. said first interior angle is approximately 114 degrees; and
  - e. said fourth interior angle is approximately 66 degrees.
6. The shell of claim 4 wherein said shape satisfies the further requirement that said first short length and said second short length are substantially equal, so that the lengths and angles are further determined as follows:
- a. said first short length and said second short length are approximately 19 degrees;
  - b. said first length is approximately 39 degrees;
  - c. said first interior angle is approximately 113 degrees; and
  - d. said fourth interior angle is approximately 67 degrees.
7. The shell of claim 4 wherein said shape satisfies the further requirement that said first long side and said second long side are substantially parallel at the center of said first long side, so that the lengths and angles are further determined as follows:
- a. said first short length is approximately 18 degrees;
  - b. said second short length is approximately 20 degrees;
  - c. said first length is approximately 40 degrees;
  - d. said first interior angle is approximately 115 degrees; and

- e. said fourth interior angle is approximately 65 degrees.
8. The shell of claim 2 wherein:
  - a. said segments further include underlapping portions adjacent to said shape for joining segments together by overlapping; and
  - b. said sides comprise lines of overlap separating exteriorly exposed surfaces of overlapping segments.
9. The shell of claim 1, further including a joining means for joining adjacent segments together.
10. The shell of claim 9 wherein said joining means comprises overlapping portions of said adjacent segments.
11. The shell of claim 10 wherein said generally spherical form is a portion of a sphere and said segments have a substantially uniform crosswise section.
12. The shell of claim 9 wherein a portion of said joining means is included within said shape.
13. The shell of claim 1, further including a plurality of interstitial elements positioned between said segments.
14. A shell of generally spherical form comprising a plurality of segments, characterized in that:
  - a. said segments are substantially identical;
  - b. said segments have an oblong form; and
  - c. said segments comprise a plurality of polygonal faces.
15. The shell of claim 14 wherein:
  - a. said oblong form is derived by division of a triacontahedron; and

- b. each of said segments occupies substantially  $\pi/15$  steradians of solid angle.
16. The shell of claim 15 wherein each of said segments comprises triangular faces of near to equal dimensions.
17. The shell of claim 14, further including a plurality of interstitial elements positioned between said segments.
18. A dome of generally spherical form, comprising:
  - a. an inner shell and an outer shell, each of said shells further comprising:
    - (1) a plurality of whole segments having a substantially identical shape;
    - (2) a plurality of partial segments, each of said partial segments having a shape which is a part of the shape of said whole segments;
    - (3) said substantially identical shape of said whole segments of each shell comprising:
      - (a) an oblong form,
      - (b) four sides, and
      - (c) a substantially uniform width; and
    - (4) a joining means for joining the segments of each shell; and
  - b. spacing means for holding said shells in spaced-apart relationship.
19. The dome of claim 18 wherein one of the segments of said inner shell is paired in radial alignment with one of the segments of said outer shell, and the aligned segments are held together in spaced-apart relationship by said spacing means.
20. A method for constructing a shell of generally spherical form, comprising:
  - a. fashioning a plurality of substantially identical oblong segments of a generally parallelogram shape, said shape being a division of a portion of a sphere or a polyhedron; and
  - b. joining together said oblong segments along their edges.

21. The method of claim 20, wherein said joining is selected from the group consisting of:

- a. overlapping said oblong segments;
- b. overlapping portions of said oblong segments;
- c. placing interstitial elements between said oblong segments;
- d. inserting segments which include a plurality of structural support elements;
- e. inserting segments which include attachments; and
- f. inserting segments which include transparent parts.